IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A pattern inspection apparatus to inspect pattern defects of a substrate in which a pattern is formed comprising:

an illumination optics which applies a first inspection light on a predetermined wavelength to a surface opposite to a pattern formed surface of the substrate, and applies a second inspection light whose wavelength is equal to the predetermined wavelength of the first inspection light to the pattern formed surface;

a detector which selectively detects a transmitted light through the substrate by irradiation of the first inspection light and a reflected light from the substrate by irradiation of the second inspection light so as to perform a transmitted light-based inspection and a reflected-light-based inspection; and

a space separation mechanism which is provided in the vicinity of an optical focal plane toward the pattern formed surface of the substrate, and ~~directionally~~ spatially separates an irradiation ~~beam~~ area of the first inspection light and the second inspection light such that the transmitted light through the substrate ~~and the reflected light from the substrate are~~ is imaged in ~~two discrete areas~~ one area ~~separated~~ on the optical focal plane separated from another area where the reflected light from the substrate is imaged.

Claim 2 (Original): The pattern inspection apparatus according to claim 1, further comprising: a first detection optics which leads the transmitted light separated by the space separation mechanism to the detector; and a second detection optics which leads the reflected light separated by the space separation mechanism to the detector.

Claim 3 (Original): The pattern inspection apparatus according to claim 2, wherein the first detection optics and the second detection optics independently change a magnification for an observed image, and change an illumination area of the illumination optics in accordance with the magnification thereof, respectively.

Claim 4 (Previously Presented): The pattern inspection apparatus according to claim 1, wherein the illumination optics has a polarizing beam splitter provided between the pattern formed surface of the substrate and the space separation mechanism, and the polarizing beam splitter reflects the second inspection light to lead the second inspection light to the pattern formed surface of the substrate, and lets the transmitted light through the substrate and the reflected light from the substrate pass through.

Claim 5 (Original): The pattern inspection apparatus according to claim 1, wherein the illumination optics has a polarizing beam splitter provided between the space separation mechanism and the detector, and the polarizing beam splitter transmits or reflects the second inspection light to lead the second inspection light to the space separation mechanism, and reflects or lets through the reflected light from the substrate obtained via the space separation mechanism to lead the reflected light to the detector.

Claim 6 (Original): The pattern inspection apparatus according to claim 1, wherein the optical focal plane toward the pattern formed surface of the substrate is at least a magnification focal plane of an observation field observed in the pattern formed surface, and a mirror is used as the space separation mechanism, and the mirror is fixed at a position offset from the optical focal plane.

Claim 7 (Original): The pattern inspection apparatus according to claim 1, further comprising an XY stage on which the substrate is mounted, and which moves in an XY direction of a plane vertical to an illumination light axis, wherein one axis of the XY stage is sequentially moved to obtain a pattern image, and a TDI sensor of a charge accumulation type is used as a detection sensor of the detector, and the number of accumulation steps of the TDI sensor for the transmitted-light-based inspection is different from that of the accumulation steps of the TDI sensor for the reflected-light based inspection.

Claim 8 (Original): The pattern inspection apparatus according to claim 1, wherein the illumination optics has a single light source.

Claim 9 (Currently Amended): A pattern inspection apparatus to inspect pattern defects of a substrate in which a pattern is formed comprising:

a first illumination optics which applies a first inspection light on a predetermined wavelength to a surface opposite to a pattern formed surface of the substrate;

a first detection sensor which is exclusively provided for detecting a transmitted light through the substrate by irradiation of the first inspection light, for a transmitted-light-based inspection;

a second illumination optics which applies a second inspection light whose wavelength is equal to the predetermined wavelength of the first inspection light to the pattern formed surface of the substrate;

a second detection sensor which is exclusively provided for detecting a reflected light from the substrate by irradiation of the second inspection light, for a reflected-light-based inspection; and

a space separation mechanism which is provided in the vicinity of an optical focal plane between the pattern formed surface of the substrate and the first detection sensor and the second detection sensor, and ~~directionally~~ spatially separates the transmitted light through the substrate and the reflected light from the substrate such that the transmitted light ~~and the reflected light are~~ is imaged in ~~two discrete areas~~ one area ~~separated~~ on the optical focal plane separated from another area where the reflected light is imaged.

Claim 10 (Original): The pattern inspection apparatus according to claim 9, further comprising: a first detection optics which leads the transmitted light separated by the space separation mechanism to the first detection sensor; and a second detection optics which leads the reflected light separated by the space separation mechanism to the second detection sensor.

Claim 11 (Original): The pattern inspection apparatus according to claim 10, wherein the first detection optics and the second detection optics independently change a magnification for an observed image, and change illumination areas of the first illumination optics and the second illumination optics in accordance with the magnification thereof, respectively.

Claim 12 (Previously Presented): The pattern inspection apparatus according to claim 9, wherein the second illumination optics has a polarizing beam splitter provided between the pattern formed surface of the substrate and the space separation mechanism, and the polarizing beam splitter reflects the second inspection light to lead the second inspection light to the pattern formed surface of the substrate, and lets the transmitted light through the substrate and the reflected light from the substrate pass through.

Claim 13 (Original): The pattern inspection apparatus according to claim 9, wherein the second illumination optics has a polarizing beam splitter provided between the space separation mechanism and the second detection sensor, and the polarizing beam splitter transmits or reflects the second inspection light to lead the second inspection light to the space separation mechanism, and reflects or lets through the reflected light from the substrate obtained via the space separation mechanism to lead the reflected light to the second detection sensor.

Claim 14 (Original): The pattern inspection apparatus according to claim 9, wherein the optical focal plane toward the pattern formed surface of the substrate is at least a magnification focal plane of an observation field observed in the pattern formed surface, and a mirror is used as the space separation mechanism, and the mirror is fixed at a position offset from the optical focal plane.

Claim 15 (Previously Presented): The pattern inspection apparatus according to claim 9, further comprising an XY stage on which the substrate is mounted, and which moves in an XY direction of a plane vertical to an illumination light axis; wherein one axis of the XY stage is sequentially moved to obtain a pattern image, and TDI sensors of a charge accumulation type are used as the first detection sensor and the second detection sensor, and the number of accumulation steps of the TDI sensor for the transmitted-light-based inspection is different from that of the accumulation steps of the TDI sensor for the reflected-light-based inspection.

Claim 16 (Previously Presented): The pattern inspection apparatus according to claim 9, wherein the first illumination optics and the second illumination optics share a single light source.

Claim 17 (Previously Presented): A pattern inspection apparatus to inspect pattern defects of a substrate in which a pattern is formed comprising:

a first illumination optics which applies a first inspection light on a predetermined wavelength to a first area of a pattern formed surface of the substrate; a first detection sensor which detects a transmitted light through the substrate by irradiation of the first inspection light;

a second illumination optics which applies a second inspection light whose wavelength is equal to the predetermined wavelength of the first inspection light and whose polarizing direction is different from that of the first inspection light, to a second area, which is separated from the first area, of the pattern formed surface of the substrate,

a second detection sensor which detects a reflected light from the substrate by irradiation of the second inspection light; and

a polarizing beam splitter which is provided in the vicinity of an optical focal plane between the pattern formed surface of the substrate and the second detection sensor, and reflects or transmits the first inspection light and the second inspection light to send to the pattern formed surface of the substrate, and transmits or reflects the reflected light from the substrate to send to the second detection sensor.

Claim 18 (Original): The pattern inspection apparatus according to claim 17, further comprising: a first detection optics which leads the transmitted light to the first detection

sensor; and a second detection optics which leads the reflected light to the second detection sensor.

Claim 19 (Original): The pattern inspection apparatus according to claim 18, wherein the first detection optics and the second detection optics independently change a magnification for an observed image, and change illumination fields of the first illumination optics and the second illumination optics in accordance with the magnification thereof, respectively.

Claim 20 (Previously Presented): The pattern inspection apparatus according to claim 17, further comprising an XY stage on which the substrate is mounted, and which moves in an XY direction of a plane vertical to an illumination light axis; wherein one axis of the XY stage is sequentially moved to obtain a pattern image, and TDI sensors of a charge accumulation type are used as the first detection sensor and the second detection sensor, and the number of accumulation steps of the TDI sensor for the transmitted-light-based inspection is different from that of the accumulation steps of the TDI sensor for the reflected-light-based inspection.

Claim 21 (Previously Presented): The pattern inspection apparatus according to claim 17, wherein the first illumination optics and the second illumination optics share a single light source.

Claim 22 (New): The pattern inspection apparatus according to claim 4, wherein an area where the polarizing beam splitter reflects the second inspection light to lead the second

inspection light to the pattern formed surface of the substrate is separated from another area where the polarizing beam splitter lets the transmitted light through the substrate.